



LICENSE RENEWAL COURSE

Required each licensing cycle to renew your existing Florida license.

Florida 2 Hour HIV/AIDS Course for Barbers

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TABLE OF CONTENTS

Lesson	Subject	Page
1	HIV/AIDS and Other Communicable Diseases	1
2	Sanitation and Sterilization	18
i.	Open Book Test	32
ii.	Course Evaluation	34
i		

Lesson 1

HIV/AIDS and Other Communicable Diseases

Lesson Outline

- (a) Modes of Transmission
- (b) Infection Control Procedures
- (c) Clinical Management
- (d) Prevention of HIV and AIDS
- (e) Attitudes towards HIV and AIDS
- (f) Appropriate behavior in dealing with persons who may have the virus or syndrome

Key Terms

HIV

AIDS

syndrome

communicable

infection

coinfection

opportunistic

antiretroviral

behavior

discrimination

(a) Modes of Transmission

Learning objectives:

After completing this lesson you will be able to:

- Define HIV and AIDS
- Identify the origin of HIV and AIDS
- Explain how HIV is transmitted
- Identify other communicable diseases

HIV/AIDS Defined

HIV is the **acronym** for **H**uman **I**mmunodeficiency **V**irus.

(An acronym is a word formed from the initial letters or groups of letters of words in a set phrase or series of words.)

HIV is the virus that causes AIDS.

AIDS is the **acrostic** for **A**cquired **I**mmunodeficiency **S**yndrome.

(An acrostic is a word formed from the first, last or other particular letters of words in a set phrase or series of words.)

AIDS is the late stage of HIV infection.

Being infected with HIV is not the same as having AIDS.

HIV infection is when the Human Immunodeficiency Virus is present in the body.

AIDS is the resulting condition of the body after having the virus for an extended period of time.

HIV slowly weakens the immune system until AIDS develops. People who have tested positive for HIV have been known to stay healthy for years with proper treatment.

Syndrome is defined as: a group of symptoms that all together indicate the presence of a disease. Multiple symptoms can occur from having a weakened immune system which indicates that the syndrome has indeed developed.

Types

There are two types of HIV.
HIV-1 and HIV-2.

HIV-1 is the type that is prevalent in the United States. Both types destroy the body's CD4+T cells. Without these cells it is impossible for the body to fight off disease.

HIV-2 is the type that is prevalent in Africa. It was discovered in 1986. However type 2 was also discovered in the United States in 1987. With this type, AIDS generally develops more slowly and is usually milder than HIV-1. It is also less infectious upon the initial acquiring of the virus by the host. Later in the stage it does become more infectious as time progresses.

Origin

There are several scientific theories on how and where the **H**uman **I**mmunodeficiency **V**irus began. However, scientists do agree that the origin of the human virus originated with a chimpanzee version. A virus called Simian Immunodeficiency Virus or SIV is the proven culprit to human infection.

Some scientists believe that humans were exposed to chimpanzee blood through hunting the animals and using their meat as food thus consuming infected meat. Other scientists believe that humans were exposed to the virus through certain vaccines that were developed by scientists in Africa. In order for scientists to create vaccines on site for the African people, they used organs from chimpanzees to cultivate the necessary elements for those vaccines. Some scientists believe the virus was present in the laboratory donor organs and thus resulted in contaminated vaccines which in turn were used to inoculate the African people.

Mass awareness of HIV began in the early 1980s. However, there is a case of HIV-1 that was recorded in 1959 in Kinshasa, Democratic Republic of the Congo. The source of the man's infection was never established but through blood analysis scientists concluded that he could have contracted it as early as the 1940s or early 1950s.

Without question the virus has been documented to exist in the United States since the mid 1970s. Physicians first began discovering that there was a high and growing rate of rare diseases in certain patients. Upon thorough study, it was determined that the patients being reported by many physicians were homosexual males.

Diagnoses included rare cancers, pneumonia and other illnesses. In 1979-1981, cities with the highest concentration of patients reported were Los Angeles and New York. Since there was a quickly growing number of men who were becoming ill, the medical community organized research to find out why.

Physicians determined that the first thing to consider was the immune system since most of the reported illnesses never occur in those with healthy immune systems.

In the end, scientists found that all of the reported patients had acquired a virus and that it was communicable.

It was in 1983, that scientists identified the virus.

The international scientific committee named it

HTLV-III/LAV (human T-cell lymphotropic virus-type III/lymphadenopathy-associated virus).

It was later changed to HIV (human immunodeficiency virus).

Transmission

HIV is a *communicable* disease which means it can be spread from one person to another.

HIV is spread by many avenues through contact with body fluids of a person that is infected with HIV.

Common Modes of transmission:

- ◆ having sexual contact with others
- ◆ having unprotected sexual contact with others
- ◆ having protected sexual contact with others
- ◆ having more than one sex partner
- ◆ having protected or unprotected oral, anal, or vaginal sex with others
- ◆ having an STD or being exposed to another person's STD during sexual contact increases the chance of contracting HIV
- ◆ sharing hypodermic needles with others
- ◆ sharing equipment or other paraphernalia used to prepare drugs for injection
- ◆ mother to child during pregnancy, birth or nursing

Less Common Modes of transmission:

- ◆ getting pricked with a contaminated sharp object
- ◆ receiving blood transfusions or organ and tissue transplants
- ◆ contaminated medical or dental implements used on you by unsafe medical or dental personnel
- ◆ eating food that has already been chewed by an infected person
- ◆ getting bit by an HIV infected person
- ◆ skin to skin contact, wound to wound contact, mucous membrane to mucous membrane contact, and body fluid to body fluid contact
- ◆ kissing using a deep method or open-mouth method with an HIV infected person whose mouth or gums are bleeding
- ◆ tattooing or body piercing with contaminated implements
- ◆ infants who have been infected by contaminated injections then infect the mother through nursing

It is not spread by:

- ◆ air
- ◆ water

- ◆ insects
- ◆ saliva, tears, sweat
- ◆ shaking hands
- ◆ sharing dishes
- ◆ closed mouth or social kissing

Other Communicable Diseases

Coinfection

Coinfection is the term used to describe the simultaneous infection of a host by multiple pathogens. A person who has HIV can become infected with a secondary disease or a coinfection such as Tuberculosis or Hepatitis. A person with HIV can in fact become infected with various other diseases simultaneously.

HIV and Tuberculosis

Tuberculosis is one of the leading causes of death in people infected with HIV.

Tuberculosis is caused by a bacterium called Mycobacterium tuberculosis.

TB infection is found mainly in the lungs but can also spread to anywhere in the body that the bloodstream can carry it. TB infection in the lungs can cause breathing difficulty, coughing, fever, chronic tiredness and increased sweating.

Transmission

TB can be acquired by inhaling droplets in the air that have been exhaled by a person with a lung or throat infection. It is spread like a cold and the germs are released into the air by sneezing, coughing, singing and speaking. Depending on the type of environment, TB germs can linger and live in the air for several hours.

Opportunistic Infection

Opportunistic infection refers to a disease that is more easily acquired because of a person's HIV condition. There is a greater risk of opportunistic infection in those with a weakened immune system. Tuberculosis is an opportunistic infection.

HIV and Hepatitis

Hepatitis is also an opportunistic infection.

Hepatitis A - is a liver disease caused by the hepatitis A virus.

The duration of the disease can last from several weeks to several months. It does not lead to chronic infection.

70% of all adults infected with hepatitis A have symptoms such as abdominal pain, anorexia, dark urine, fever, jaundice or nausea.

Symptoms usually appear in the first 28 to 30 days after exposure but can begin at any time between the 15th day to the 50th day after exposure. These symptoms last from 2 to 4 weeks. After having Hepatitis A your body becomes immune to any further exposure for a lifetime.

Hepatitis A is the most common form of acute viral hepatitis in the United States. From the year 2000 to 2004, 654 cases were diagnosed in Florida. The average age of these diagnoses are 25 to 39 for adults and age 5 to 9 in children.

Transmission

It is acquired by ingesting fecal matter that is infected with the virus. Ingestion can be due to close person-to-person contact, sexual contact or through ingesting contaminated food or drink.

The virus is shed by the body into the stool.

In Florida, males who have sex with males have become an increasingly important risk group for hepatitis A. The proportion of reported hepatitis A cases occurring in males 20-49 years of age rose from 61.4% in 1995 to 77.2% in 2001.

Risk of transmission is also high for young children. They usually have little to no symptoms, have poorer hygiene than adults and are thought to shed the hepatitis virus for a longer time period.

Some outbreaks have been associated with restaurants. It is uncommon for this type of outbreak but when it happens it can effect very large numbers of people.

Florida had it's largest outbreak to date in 2001 that involved a group of methamphetamine users.

Prevention

Proper hand washing, protection from contact and vaccinations can prevent the spread of hepatitis A. Hand washing techniques should include efficient cleaning of the fingernails and fingertips. Wash hands after each toilet use, after changing diapers, after handling animals, and before eating or preparing food.

It is recommended that if you travel to a foreign country to be vaccinated for hepatitis A. Vaccinations are also recommended for men who have sex with men, children, migrant farm workers and other high risk groups such as drug users.

Hepatitis B - is a liver disease caused by the hepatitis B virus.

Symptoms usually appear two months to six months after begin infected.

They include dark urine, fatigue, fever, hives, jaundice, joint pain, rash, poor appetite, and vomiting. Some people experience only light to no symptoms. Hepatitis B virus is not spread by casual contact.

Transmission

It is acquired by coming into contact with infected body fluids or blood of an infected person.

It can be transmitted through sharing hypodermic needles, through sexual contact or from an infected mother to her newborn through nursing.

Hepatitis B virus lives in blood, saliva, semen and body fluids of an infected person. It is spread by direct contact with those fluids. People who are at a particularly high risk of coming in contact with someone who is infected with hepatitis B are: homosexual males, personal care workers, drug users who share hypodermic needles or other paraphernalia, hemodialysis patients, those who live in the same house as an infected person, and infants born to infected mothers,

Prevention

Carriers of hepatitis B should follow strict practices to ensure the safety of others. Others must not come in contact with their blood or body fluids.

Do not share any objects that could be contaminated with even microscopic amounts of blood such as shaving razors or toothbrushes. Carriers should notify their healthcare providers and any other person giving them personal care services such as barbers, hairdressers, manicurists or estheticians.

Household members or sexual partners should get the hepatitis B immunization.

About 90% of those infected by hepatitis B as children develop chronic hepatitis B in their lifetime. An estimated 10% of infected adults will develop chronic hepatitis B that leads to cirrhosis and cancer of the liver. Liver transplants are the only option in the end stage of the disease.

Hepatitis C - is a liver disease caused by the hepatitis C virus.

It often has no symptoms even for many decades and often results in cirrhosis of the liver and liver cancer.

Hepatitis C is the most common blood-borne infection in the United States. An estimated 1.8% of the population have been infected, that is about 3.9 million people.

Transmission

It is acquired through contact with the blood of an infected person: such as sharing hypodermic needles or other drug related implements, blood transfusions, organ transplants, mother to infant during delivery and sexual contact.

Hepatitis C in Florida:

Current studies estimate that 300,000 Floridians are infected with the hepatitis C virus.

It is spread each year to approximately 2,000 additional Floridians.

Because the early stages of hepatitis C manifests only mild symptoms, new infections tend to go undiagnosed.

Hepatitis D - is a serious liver disease caused by the hepatitis D virus and relies on the hepatitis B virus to replicate. It is uncommon in the United States.

It is acquired through coming in contact with the blood of an infected person, similar to how hepatitis B is spread.

Hepatitis E - is a serious liver disease caused by the hepatitis E virus.

It is acquired by ingesting infected fecal matter.

Often the source of infection is through contaminated water supplies in countries with poor sanitation.

(b) Infection Control Procedures

Learning objectives:

After completing this lesson you will be able to:

- List the symptoms of HIV infection
- Define ways to avoid infecting others

Know the Signs of HIV/AIDS

One thing that has allowed HIV infection to spread so far so fast is the lack of symptoms at first.

Many people infected with HIV for 10 or more years have no symptoms of illness.

They can still infect other people during this time unless they practice safe sex.

The only way to know if you are infected is to be tested. Because a test is an analysis of your health at one given time, it is wise to be tested periodically. It can take three to five months from exposure to HIV infection to when HIV can be found in a blood test.

When HIV infection begins to make an impact on a person's immune system, the person might show signs such as:

- A deep tiredness that cannot be explained
- A dry cough
- A fever that comes and goes
- Blotches that can be red, brown, pink or purplish under the skin or inside the mouth, nose or eyelids
- Diarrhea that lasts for more than a week
- Heavy night sweats
- Memory loss, depression or other neurological disorders
- Rapid weight loss
- Swollen lymph glands in the armpits, groin or neck
- White spots or odd blemishes on the tongue, mouth or throat

Having these symptoms doesn't mean a person has HIV or AIDS. Many illnesses have symptoms like these. Only an HIV test can make certain whether a person has HIV or not.

The AIDS Healthcare Foundation operates the largest private HIV and STD testing program in California. It also offers testing in Florida. These testing facilities can be found in a variety of settings, including mobile vans.

You can also ask your health care provider to give you an HIV test.

As with other diseases, the earlier HIV infection is discovered, the more effectively it can be treated.

Telling Others You Have HIV

Knowing who to tell when you learn that you have HIV can be a challenge. You may not feel like telling anyone. On the other hand, letting the right people know can help you feel better. You won't have to keep secrets from those close to you. You'll be able to talk about what's in your mind and important to you.

It's extremely important that you:

- ◆ Tell anyone with whom you **have had** sex. This can be difficult. It's essential that they be told so they can be tested and get treatment, if necessary. Knowing if they have HIV can help them from spreading it to others.
- ◆ Tell anyone you **plan to have** sex with. Practicing safe sex will help protect your health and that of any partners. **In some states, not telling a sexual partner you have HIV before having sex is a felony.**
- ◆ **Tell your doctor and dentist.** This helps them give you the right kind of care. As medical professionals, they have an obligation to keep this information private and confidential. A doctor or dentist **cannot refuse to treat you** because you have HIV.

It can be difficult to tell others. Some people may not be well informed about HIV. They may find it hard to accept that you have this disease. Some people may end their friendship with you or reject you in a dating situation. Often, you won't know how someone will respond until you tell them.

(c) Clinical Management

Learning objectives:

After completing this lesson you will be able to:

- Describe the reliability of HIV testing
- Describe the stages of HIV infection
- List the types of studies and clinical trials performed by the AIDS Healthcare Foundation
- List opportunistic infections related to AIDS
- Define the term antiretroviral

You can have and spread HIV for up to 10 years without having any symptoms of HIV or AIDS.

HIV affects each individual differently. It is possible to look and feel healthy for years. The only sure way to know if you have HIV infection is to get tested.

Today, testing for HIV is more reliable than tests for many other diseases. The accuracy in establishing whether a person does – or does not – have HIV infection is quite high and reliable. Usually when a test comes back HIV positive, the test is repeated or other test are done to check for viral genetic material in body fluids and cells to confirm the first test results.

Knowing if you have HIV, gives you the power to seek treatment when it will be most effective. It also makes it possible for you to avoid spreading the infection to others.

How HIV Progresses to AIDS

Some people believe that HIV is the same thing as AIDS.

HIV actually has several stages. HIV can move through these stages slowly or quickly.

Studies of people, who don't receive treatment for HIV, show that about half of HIV-infected people progress to AIDS within 10 years of being infected.

Three out of four HIV-infected people progress to AIDS within 15 years of infection. Children who are born with HIV and people who got HIV through a blood transfusion tend to get sick more quickly.

The stages of HIV tend to follow the pattern highlighted below, although actual times vary a great deal from one person to another:

TIME AFTER INFECTION	STAGE
3 to 6 months	HIV spreads within the body and becomes detectable when an HIV test is done.
1 to 10 years	A person tests positive for HIV but can still feel healthy.
3 to 10 years	Minor symptoms can appear.
8 to 12 years	Symptoms of HIV or AIDS begin to appear.

When HIV Becomes AIDS

AIDS is the last stage of HIV-infection. A doctor can make the diagnosis of HIV infection that has become AIDS. **This diagnosis is based on guidelines established by the Centers for Disease Control.**

Since 1996, powerful virus-fighting drugs have been introduced that dramatically delay the progression of HIV to AIDS. Other new treatments and drugs are now being used to treat illnesses associated with AIDS.

Clinical Trials

Biomedical research typically involves human subjects at various stages in the development of drugs, vaccines or techniques. By its very nature, biomedical research raises myriad ethical issues, which become increasingly complex as medicine advances and the scope of research and clinical trials widens internationally.

In 1964, the World Medical Association issued The Declaration of Helsinki, which set out ethical guidelines for physicians engaged in biomedical research. Updated periodically, the declaration is the fundamental document in this field and has influenced the formulation of international, regional, and national legislation and codes of conduct.

Before prospective products come to human trials, they are developed and tested for safety using animal models, in the laboratory. The data obtained from laboratories form the basis on which decisions are made regarding human trials and registration of new drugs for use in the health services. It is imperative therefore that the data be high quality, rigorous and trustworthy, and WHO is in the forefront of setting standards for good laboratory practice.

Antiretroviral drugs are medications for the treatment of infection by retroviruses, primarily HIV.

AIDS Healthcare Foundation (AHF) conducts experiments and in-depth studies with anti-retroviral treatments, including:

- **Studies of new ARV medications, both before and after FDA approval**
- Studies for people who already take ARV medications and are failing, as well as studies for people who have not yet begun ARV therapy
- Studies comparing different combinations of ARV medications
- Studies to reduce the number of pills a person must take, and to reduce dosing frequency

- Women's studies, looking at the quality of life for women with HIV
- Studies examining obstacles that prevent people from taking their ARV medications as prescribed
- Research into related conditions such as Hepatitis C and neurological disorders

Anti-retroviral therapy doesn't cure AIDS, nor does it prevent the spread of HIV.

Antiretrovirals do, however, extend life and improve the quality of life while living with HIV.

As HIV progresses, the immune system becomes weakened. The body isn't able to defend itself against common bacteria and viruses that a healthy immune system can do easily. **These are called opportunistic infections because they take advantage of the weakened immune system.** If you are on antiretroviral therapy, you can go along time before developing opportunistic infections.

Some of the more common opportunistic infections are:

- **Hepatitis C** - inflammation of the liver, caused by a virus or a toxin and characterized by jaundice, liver enlargement, and fever.
- **Human papilloma virus (HPV)** - a species of virus that causes genital warts.
and
- **Tuberculosis (TB)**- an infectious disease that may affect almost any tissue of the body, especially the lungs, caused by the organism

Antiretroviral Drugs

Anti-retroviral drugs are powerful. Taken in combinations of two or more drugs at a time, they can keep HIV infection in check for long periods. **Antiretroviral drugs have reduced the death rate from HIV/AIDS by 80%.** At the same time, they have made dramatic improvements in the quality of life for people who have HIV infection.

At the same time, anti-retroviral drugs have side effects of their own and can cause interactions for other drugs that a person may need to take for opportunistic infections.

(d) Prevention of HIV and AIDS

Learning objectives:

After completing this lesson you will be able to:

- List pro-active measures that help prevent HIV infection
- List the diseases that condoms are reported to protect against

While global prevalence of HIV infection (percentage of persons infected with HIV) appears to have stabilized in recent years, the global number of people living with HIV is increasing because of ongoing accumulation of new infections with longer survival times, measured over a continuously growing general population.

Across the world, a small but growing number of countries have reduced HIV prevalence through sound prevention efforts. The high rates of transmission of HIV result largely from failure to use the available and effective prevention strategies and tools, and poor coverage of HIV prevention programs.

HIV prevention services were only reaching 20% of people in need in 2005, while coverage for key populations at higher risk of exposure to HIV were considerably lower.

Effective HIV prevention programming focuses on:

- the critical relationships between the epidemiology of HIV infection
- the risk behaviors that expose to HIV transmission and
- addresses the collective social and institutional factors such as
 - a) sexual norms
 - b) gender inequalityand
- c) HIV related stigma, that will otherwise continue to fuel the HIV epidemic

Risk behaviors can differ greatly and are found in all

- economic
- legal
- political
- cultural
- and
- psychosocial areas of life.

Comprehensive HIV prevention requires a combination of programs and policies that promote

- safer behaviors
- reduce vulnerability to transmission
- encourage use of key prevention technologies
- promote social norms that favor risk reduction and
- address drivers of the epidemic

Effective prevention efforts focus on measures that directly support risk reduction by providing information and skills as well as access to needed commodities (such as condoms, sterile injecting equipment, and drug substitution therapy) for the populations most in need.

In short, national planners and policymakers must: 1) Know the epidemic; and 2) Set priorities accordingly.

Prevention and treatment must be scaled up in a balanced way, to capitalize fully on synergies between the two. Comprehensive HIV prevention requires a combination of programmatic interventions and policy actions that promote safer behaviors, reduce biological and social vulnerabilities to transmission, encourage use of key prevention technologies, and promote social norms that favor risk reduction.

Sex workers, men who have sex with men, injecting drug users, and prisoners, tend to have a higher prevalence of HIV infection than that of the general population, because they engage in behaviors that put them at higher risk of becoming infected and they are among the most marginalized and discriminated against populations in society.

In countries with low-level and concentrated epidemics, well-designed and adequately funded HIV prevention programs among these populations have proven decisive in slowing or even stopping the epidemic in its tracks.

Countries with generalized epidemics that place a high priority on HIV programming for these populations, guided by epidemiological surveillance, will ensure the most effective use of resources.

Many other populations are also vulnerable to HIV and their HIV prevention needs should also be addressed.

These key populations include:

Children and orphans
Indigenous people
People who inject drugs
Men who have sex with men
Migrants and mobile workers
Peacekeepers
People in the health sector
People in prison settings
Refugees and internally displaced people
Sex workers and their clients
Women and girls
Young people

According to Medical Research

To keep from getting HIV:

It's extremely important that you tell anyone you plan to have sex with that you are HIV positive.

Use latex condoms. Proper, consistent use of a latex condom can prevent transmission of HIV 80 to 95% of the time. Condoms can also help reduce the risk of acquiring some other STDs
Use plastic wrap or dental dams to help prevent HIV-infection during oral and oral-anal sex.
Use clean needles: if you do use injectable drugs, use a new, clean needle every time.
Have sober sex. Drug and alcohol-free sex increases your chances of having safer sex.
Learn more. The more you know about safe sex, your body, condom use, HIV/AIDS and your partner, the better you can protect yourself against sexually transmitted diseases.
Fewer partners, monogamy and abstinence. The fewer sex partners you have, the more you reduce your risk of HIV infection. While sex is a healthy, natural part of life, you may want to wait to have sex until you know the person you are with is someone you truly care about and has your best interest in mind. If they're not willing to wait, then maybe they weren't worth the wait. Trust yourself and what you need. It's your life and your health. Protect it.

According to Medical Research: Proper, consistent use of a condom:

1. Prevents transmission of **HIV** by 80-95%
2. Prevents transmission of **HPV** by 70%
3. Reduces the risk of **gonorrhea** in men by 70%
4. Consistent use prevents the spread of HIV
5. Reduces the risk of **syphilis**
6. Reduces the risk of sexually transmitted infection during oral sex
7. Reduces the risk of HPV, **herpes, Chlamydia, and pelvic inflammatory disease.**

Prevention

Female Condoms

Although shown to be effective in prevention of pregnancy and acceptable to users, the female condom has not achieved its full potential in national programs because of its relatively high cost. A new version of the Reality® female condom is made of synthetic nitrile, which makes it considerably less expensive. The new device has the potential for wider acceptability and utilization.

It is hoped that, if high utilization rates of the new device can be achieved, it will make a substantial contribution to prevention of unwanted pregnancy and sexually transmitted infections (STI), including HIV.

In addition to the new female condom, trials are also under way to test the effectiveness of diaphragms and other methods of protecting the cervix for HIV and STI prevention.

Male Circumcision

Male circumcision is one of the oldest and most common surgical procedures known. It is undertaken for cultural, religious, social as well as medical reasons.

The evidence that adult male circumcision is effective in reducing sexual transmission of HIV from women to men is compelling.

Male circumcision should always be considered as part of a comprehensive HIV prevention package. Moreover, wherever male circumcision services are offered, training and certification of providers, as well as careful monitoring and evaluation of programs, will be necessary to ensure that these meet their objectives and that quality services are provided safely, with adequate equipment and with appropriate counseling and other services.

(e) Attitudes towards HIV and AIDS

Learning objectives:

After completing this lesson you will be able to:

- Describe issues of behavior and communication concerning HIV
- List the considerations that a person with HIV has on a professional level

Behavior

Unlike some infectious diseases, transmission of HIV is mediated directly by human behavior, so changing behaviors that enable HIV transmission is the ultimate goal or outcome required for HIV prevention.

Sexual behavior, which remains the primary target of HIV prevention efforts worldwide, is widely diverse and deeply embedded in individual desires, social and cultural relationships, and environmental and economic processes. So too are the behaviors related to transmission through injecting drug use and from mother to child. This makes HIV prevention a complex task with multiple dimensions, that requires both policy and programmatic actions.

In the context of HIV, risk is defined as the probability that a person may acquire HIV infection. Certain behaviors create, enhance and perpetuate such risk. Risk arises from individuals engaging in risk behaviors for a variety of reasons such as lack of information, inability to negotiate safer sex, unavailability of condoms, etc. Over the recent years, the approach to HIV has broadened to not only focus on individual risks but also on the environmental and social factors that influence such behavior, and the key role that power relationships and gender inequalities play in influencing risk.

Despite recent evidence in expansion of access to prevention, treatment, care and support services, the fundamental role of human behavior in the continued spread of HIV is increasingly clear. Fostering health enhancing behavior change outcomes demands a persistent commitment to meeting the diverse and changing needs of individuals, and to addressing the characteristics of their social, cultural and physical environments that place them at risk.

Communication for Behavior Change

- Information, Education and Communication – sometimes called IEC - are a critical part of the puzzle for achieving the goal of universal access to HIV prevention, treatment, care and support. However, information, education and communications must be combined with other interventions to succeed.
- Methods of communication range from one-to-one personal interactions to posters placed in school classrooms to prevention messages on national television. The focus may range from reducing stigma or decreasing HIV infection, but the ultimate goal is behavior change.
- National programs must identify the array of behavior change needs and communication strategies throughout the country. Resources can then be devoted to development of programming specific to each cultural or behavioral group at high risk of HIV infection.
- Whatever the local epidemiological and social conditions, effective HIV prevention programs prioritize and focus on the intervention needs of people most at risk of exposure to HIV and likely to engage in HIV risk behaviors, and they focus program efforts on reaching adequate numbers of these key audiences with good quality services. These audiences should be segmented, and information and services should be tailored to meet each subpopulation's needs.
- Segmenting in this sense means identifying subpopulations within each key audience that are different enough to require different approaches or messages (for example, distinguishing transgendered persons from men who have sex with men, or street-based from brothel-based sex workers). It does not mean singling out those populations for blame or persecution, or stigmatizing an HIV prevention measure as only for specified people. Effective HIV prevention includes efforts to ensure that segmenting the response does not lead to stigmatization and other unintended adverse consequences.

On a Professional Level

One particularly tricky consideration is whether to tell an employer about your health status. **The Americans with Disabilities Act (ADA) protects people with disabilities from job discrimination. As long as you can do the essential functions of your job, your employer can't legally discriminate against you because of your HIV status.**

If your illness or treatment interferes with your job, you may want to tell your employer. Get a letter from your doctor explaining what you need to do for your health. Talk to your boss or personnel director. Assure them that you want to continue working and what changes may be needed in your schedule or workload to do so. Make sure that they understand that you want to keep your HIV status confidential.

(f) Appropriate behavior in dealing with persons who may have the virus or syndrome

Learning objectives:

After completing this lesson you will be able to:

- Describe the International Labor Organization's role regarding workplace attitudes
- Explain the US Dept. of Labor's SHARE program
- Define the Share program's effectiveness

Care & Support

People living with HIV have a wide range of care and support needs. These include psychosocial support as well as treatment for 'opportunistic infections' (the illnesses to which they become vulnerable as the immune system is destroyed by the virus). When their HIV infection reaches the stage that it becomes life-threatening, they require treatment with antiretroviral drugs. However, the vast majority of people around the world do not yet have access to such services. Reaching out to them is a global priority.

AIDS-related care and support are key elements in the response to the epidemic: not only do they directly benefit people living with HIV, but they help also to reduce the social and economic impact of the epidemic and to boost HIV prevention.

Monitoring & Evaluating

UNAIDS harmonizes monitoring and evaluation approaches at global, regional and country levels to generate reliable and timely information on the epidemic and the response.

The Country Response Information System (CRIS)

CRIS is an information system for monitoring and evaluating national responses to AIDS. It includes integrated indicator, project/resource tracking, and research modules. It facilitates the development of a clearinghouse for indicator data to enable indicator exchange between UN and other partner applications..

Stigma & Discrimination

Because of its association with behaviors that may be considered socially unacceptable by many people, HIV infection is widely stigmatized.

People living with the virus are frequently subject to discrimination and human rights abuses: many have been thrown out of jobs and homes, rejected by family and friends, and some have even been killed.

Together, stigma and discrimination constitute one of the greatest barriers to dealing effectively with the epidemic. They discourage governments from acknowledging or taking timely action against AIDS. They deter individuals from finding out about their HIV status. And they inhibit those who know they are infected from sharing their diagnosis and taking action to protect others and from seeking treatment and care for themselves.

Workplace attitudes toward people living with HIV/AIDS, and acceptance of condom use and other preventive measures have increased in some countries as a result of HIV policies and practices, according to a report by the **International Labor Organization**.

The report, titled "Saving Lives, Protecting Jobs," was prepared by the ILO Program on HIV/AIDS in the World of Work and presented to the U.S. Department of Labor, which is the funding partner in the Strategic HIV/AIDS Responses in Enterprises, or SHARE, project, Occupational Health Safety reports.

The report tracked changes in attitudes related to HIV/AIDS and looked at data collected from the ministries of labor, and employers and employees from workplaces in six SHARE pilot countries, including Belize, Benin, Cambodia, Ghana, Guyana and Togo. According to the report, in all six countries, the proportion of workers who reported supportive attitudes toward co-workers living with HIV/AIDS increased on average from 49% in 2003 to 63%.

Attitudes toward condom use also improved in the six countries. The percentage of workers who reported using condoms with nonregular partners increased from 74% in 2003 to 84%, the report found. The recorded changes in behavior could be attributed partly to the increased access to HIV services in the workplaces in all six countries. According to an ILO release, the report also found that in 2003 when SHARE started, only 14% of the participating workplaces in the six pilot countries had codified HIV policies. The report found that 76% of the participating enterprises now have written policies.

14 April 2008 - Article

Saving lives, protecting jobs: new horizons in the fight against HIV/AIDS at work

HIV is having a devastating effect on the world of work. The majority of the 33.2 million people worldwide living with HIV/AIDS are working and have skills and experience their families, workplace and countries can ill afford to lose. As the UN's lead agency in HIV/AIDS workplace interventions, the ILO is launching a new report highlighting strategic responses to HIV/AIDS in enterprises worldwide. ILO Online spoke with Dr Sophia Kisting, Director of the ILO/AIDS.

The workplace offers distinct opportunities and advantages as a key delivery point for HIV prevention, treatment and care programs on an on-going basis. Using a combination of dialog, training and facilitation methods, the **SHARE** program aims to increase the capacity of government, employers' and workers' organizations in participating countries to protect working people from HIV and help to reduce its impact on the world of work. The main thrust of the SHARE program is action at the enterprise level. **The program financed by the United States Department of Labor** is now reaching more than a million workers.

Is changing attitudes and behavior key to successful workplace interventions?

Behavior change programs are an essential and central element in enterprise-level initiatives within SHARE. Many workers do not know enough about HIV to protect themselves, while others do know but still don't change their behavior to reduce the risk of infection.

Behavior change is a form of participatory education that encourages people to understand their own attitudes to HIV, assess their own risks, and motivate them to change behavior.

The program uses targeted messages and approaches and is implemented through a system of peer education. This is based on the idea that individuals are most likely to change their behavior through the support of people they know and trust. **Positive individual behavior change in turn encourages and motivates more collective behavior change.**

Various Outreach Programs

- Out of the Closet
- Men's Wellness Center
- West Hollywood Mobile Testing Unit
- Magic Johnson Mobile Testing Van
- Jails Testing Program
- Partner Counseling and Referral Services
- Social Marketing
- Outreach and Education
- Oakland
- InSpot

Lesson 2

Sanitation and Sterilization

Lesson Outline

- (a) Universal Sanitation and Sterilization Precautions
- (b) How to distinguish between disinfectants and antiseptics
- (c) How to sanitize hands and disinfect tools

Key Terms

EPA

sanitize

disinfect

antiseptic

precautions

(a) Universal Sanitation and Sterilization Precautions

Learning objectives:

After completing this lesson you will be able to:

- List precautionary elements that will protect the client
- Explain proper cleaning and disinfection procedures for equipment

The United States Environmental Protection Agency has set Universal Sanitation and Sterilization Rules.

The only way to properly sanitize the salon and salon implements is to follow standards set by the United States Environmental Protection Agency and your State Board Laws regarding Sanitation and Sterilization.

The following facts apply.

Label Information On Disinfectant Products

The label should clearly state that the product is a hospital or medical disinfectant. It may also list the following organisms:

Staphylococcus aureus
Salmonella enterica
Pseudomonas aeruginosa

The product label should clearly identify an EPA Registration Number.

The label will also specify use sites that are health care related.

Important measures

- Follow your state guidelines and regulations
- Read all labels and instruction manuals
- Know the condition of your equipment

Guideline for Cleaning and Disinfecting Equipment

These guidelines outline procedures cleaning (*sanitizing*) and disinfecting all types of equipment. In the salon, all tools, implements, devices or other pieces of equipment must be properly cleaned and disinfected before it comes into direct contact with a client, as required by the licensing rules and regulations of your region, state or country.

Proper Cleaning and Disinfection

Everything in the salon has either a hard or soft surface. Any surface coming into direct contact with a client's skin is considered contaminated.

All contaminated surfaces must be thoroughly and properly:

- 1) cleaned and then 2) disinfected.

To be considered properly clean, a surface must first be thoroughly scrubbed free of all visible signs of debris or residue. Proper cleaning is the total removal of all visible residue from every surface of tables, tools and equipment, followed by a complete and thorough rinsing with clean water.

Proper cleaning must be performed before continuing with the disinfection step. Proper *disinfection* is the destruction of potentially harmful or infection-causing microorganisms (pathogens) on a pre-cleaned surface.

Disposable (Single Use) items

Items that the manufacturer designs to be disposed of after one use are called “disposable” or “single-use”. These items must be properly disposed of after one use on a single client. Reusing these items is considered an unsanitary, improper and unprofessional practice. Some examples of disposable items are: cotton balls, gauze pads, wooden implements, disposable towels, toe separators, tissues, wooden sticks, arbor bands/ sleeves for electric files and certain abrasive files and buffers. Items damaged during the cleaning and disinfecting process are considered single-use and must be discarded after every client.

Proper Product Application

Some types of products can become contaminated if improperly used. Some examples are: creams, lotions, scrubs, paraffin wax, masks, and oils. These products must always be used in a sanitary manner that prevents contamination. For example, paraffin and nail oils should not be applied with a brush (or spatula) that has touched the skin. These practices may introduce bacteria into the product and cause contamination that can render products unsafe for use.

To avoid product contamination always:

- (a) Dispose of used or remaining product between clients.
- (b) Use single-use disposable implements to remove products from containers for application or remove product with a clean and disinfected spatula and put product to be used into a disposable or disinfect-able service cup.
- (c) Use an applicator bottle or dropper to apply the product.

Proper Disinfection of Multi-Use Tools and Equipment

Some items are designed to be used more than once and are considered to be “multi-use”. Multi-use items are sometimes referred to as “disinfect-able”, which means that the implement can be properly cleaned and disinfected while retaining its usefulness and quality. Multi-use items are designed for use on more than one client, but require proper cleaning and disinfection between each use..

Hard and non-absorbent items constructed of hard materials that do not absorb liquid, like metal, glass, fiberglass or plastic should be cleaned and disinfected as described below.

Self-disinfecting items that will not support the growth of bacteria, viruses or fungi are application brushes used for nail polish and artificial enhancement application brushes.

Due to the nature of these products, the brushes do not require disinfection and should be cleaned, used and stored only as recommended by the product manufacturer.

Individual Client Packs

Tools/instruments kept in individual packs must be properly cleaned and disinfected after each use. If a client provides their own implements/tools, they must be properly cleaned and disinfected before use. State rules require all tools and equipment to be disinfected before being reused, even if used by the same client! Improperly cleaned and disinfected implements may grow infection/disease-causing organisms before the client returns for their next visit, thereby increasing the risk of infection. Never use air-tight bags or containers for storage as these can promote bacterial growth.

Methods of Proper Cleaning

Proper cleaning requires liquid soap/detergent, water and the use of a clean and disinfected scrub brush to *remove all visible* debris and residue. All items should be scrubbed with a clean and disinfected scrub brush under running water. Cleaning is not disinfection; disinfection is an entirely separate step. Different items are cleaned in different ways. This often depends on what the item is made of and how it was used.

NOTE: the cleaning step must be properly performed before an item can be disinfected. All items must be thoroughly rinsed and dried with clean cloth or paper towels prior to putting them into a disinfectant.

Cleaning (sanitation) Method Examples

- Scrub Brush
- Ultrasonic Cleaner
- Acetone Soak
- Washing machine -Cloth towels, linens, chamois
- Towelette/Wipe -Electrical equipment, table tops

Methods of Proper Disinfecting

After proper cleaning, all reusable implements and tools must be disinfected by complete immersion in an appropriate disinfecting solution.

The item must be completely immersed so that all surfaces, including handles, are soaked for the time required on the disinfectant manufacturer’s label. In general, U.S. Environmental Protection Agency (EPA) registered disinfectants require 10 minute immersion.

Remove items after the required time, using clean and disinfected tongs or gloves to avoid skin contact with the disinfectant solution. If required by the instruction label, rinse thoroughly in running water.

Allow items to air dry completely by placing them on top of a clean towel and covering them with another clean towel.

Methods for Proper Storage

All properly cleaned, disinfected and dried implements must be stored in a sanitary manner. A lined drawer is usually adequate, provided it is clean, contains only clean items and is properly labeled.

Store soiled or used items in a properly labeled, covered container separate from clean items. Never use airtight containers or zipper bags – these may promote bacterial growth!

Appropriate Disinfectants

How do you know if a disinfectant product is suitable for professional salon use? Standards and requirements vary from country to country, but in the United States, the EPA registered Hospital disinfectants with bactericidal, fungicidal and virucidal claims on the label are best for use in salons.

Disinfectant products are designed to destroy disease-causing microorganisms (pathogens) on non-living surfaces, such as those described in this document. They are not appropriate for use on living skin and contact with skin should be avoided.

Appropriate salon disinfectants include the following:

- (a) EPA-registered Hospital disinfectants with bactericidal, fungicidal and virucidal claims on the label.
- (b) 10% bleach solution (1 part bleach to 9 parts water)

Contact with Blood, Body Fluid or Unhealthy Conditions

If blood or body fluid comes in contact with any salon surface, the nail professional should put on a pair of clean protective, disposable gloves and use an EPA-registered Hospital liquid disinfectant or a 10% bleach solution to clean up all visible blood or body fluid. In case of an accidental cut, clean with an antiseptic and bandage the cut. Disposable items, such as a cotton-tipped wood stick must be immediately double-bagged and discarded after use, as described at the end of this section. Any non-porous instrument or implement that comes in contact with an unhealthy condition of the nail or skin, blood or body fluid, must be immediately and properly cleaned, then disinfected using an EPA-registered Hospital disinfectant as directed or a 10% bleach solution.

Any porous/absorbent instrument that comes in contact with an unhealthy condition of the nail or skin, blood or body fluid must be immediately double-bagged and discarded in a closed trash container or bio-hazard box.

Some EPA disinfectants are registered for hospital use, but may not say “Hospital” on their label. In these cases, the product label **MUST** claim effectiveness against *Salmonella choleraesuis*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa*.

Additional Information about Disinfectants and Cleaners

1) Disinfectants must be mixed, used, stored and disposed of according to manufacturer’s label instructions (proper mixing ratio is of the utmost importance to be an effective disinfectant). Some are ready to use and do not require mixing.

2) U.S. Federal Law prohibits the use of EPA-registered disinfectants in a manner that is contrary to its label.

3) Disinfectants must be prepared fresh every day (including spray bottles). Further, they must be replaced immediately if the solution becomes visibly contaminated. Disinfectant solutions will lose their strength upon standing and become ineffective within 24 hours. Use a logbook to record when fresh disinfectant is made.

4) Disinfectants are ineffective if implement/tools are not properly cleaned prior to use.

5) Just spraying disinfectants on tools and equipment is inadequate.

6) Disinfectants can damage or rust some metal tools if improperly used.

7) All disinfectant containers must be properly labeled. Disinfectant solutions prepared in the salon must list on the container: the contents and percentage solution (concentration), and use a logbook to record the date and time of mixing. Check the label for the product's expiration date.

8) All brushes used for cleaning purposes, i.e., nail brushes and electric-file bit cleaning brushes, must be properly cleaned and disinfected between each use.

9) Ultra-violet light cabinets are not suitable replacements for liquid disinfectant solutions. These can be used for storage after properly cleaning and disinfecting implements/tools with a liquid solution.

10) Read all warning labels and precisely follow manufacturer's instructions.

These guidelines are believed to be highly effective and are designed to help avoid unforeseen pitfalls, problems and complications.

These guidelines are not a replacement for local government standards, rules or regulations.

Always consult federal, state and local laws and regulations, which may vary somewhat from these recommendations.

A disinfectant label should clearly show its uses and that it is EPA-approved.

Salons should use an EPA-registered hospital disinfectant

The label should list relevant product information, including:

1. The terms "Disinfectant" and also "Hospital" or "Medical" or "Health Care". (This indicates the product can be used as a disinfectant on surfaces in these environments.)

2. The EPA registration number.

(b) How to distinguish between disinfectants and antiseptics

Learning objectives:

After completing this lesson you will be able to:

- Define the terms disinfectant and antiseptic
- Identify precautions with these chemicals
- List their purposes

Disinfectants and Antiseptics

Antiseptic: A substance that inhibits the growth and reproduction of disease-causing microorganisms. For practical purposes, antiseptics are routinely thought of as topical agents, for application to skin and mucous membranes.

Disinfectant: Any chemical agent used chiefly on inanimate objects to destroy or inhibit the growth of harmful organisms.

Purpose

Antiseptics are a diverse class of drugs which are applied to skin surfaces or mucous membranes for their anti-infective effects. Their uses include cleansing of skin and wound surfaces after injury, preparation of skin surfaces prior to injections or surgical procedures, and routine disinfection of the oral cavity as part of a program oral hygiene.

Antiseptics are also used for disinfection of inanimate objects, including instruments and furniture surfaces.

Commonly used **antiseptics for skin** cleaning include benzalkonium chloride, chlorhexidine, hexachlorophine, iodine compounds, mercury compounds, **alcohol and hydrogen peroxide**. Other agents which have been used for this purpose, but have largely been supplanted by more effective or safer agents, include boric acid and volatile oils such as methyl salicylate.

Chlorhexidine shows a high margin of safety when applied to mucous membranes, and has been used in oral rinses and preoperative total body washes.

Benzalkonium chloride and hexachlorophine are used primarily as hand scrubs or face washes. Benzalkonium may also find application as a disinfecting agent for instruments, and in low concentration as a preservative for drugs including ophthalmic solutions. Benzalkonium chloride is inactivated by organic compounds, including soap, and must not be applied to areas which have not been fully rinsed.

Iodine compounds include tincture of iodine and povidone iodine compounds. Iodine compounds have the broadest spectrum of all topical anti-infectives, with action against bacteria, fungi, viruses, spores, protozoa, and yeasts. Iodine tincture is highly effective, but its alcoholic component is drying and extremely irritating when applied to abraded (scraped or rubbed) skin. Povidone iodine, an organic compound, is less irritating and less toxic, but not as effective. Povidone iodine has been used for hand scrubs and disinfection of surgical sites. Aqueous solutions of iodine have also been used as antiseptic agents, but are less effective than alcoholic solutions and less convenient to use than the povidone iodine compounds.

Hydrogen peroxide acts through the liberation of oxygen gas. Although the antibacterial activity of hydrogen peroxide is relatively weak, the liberation of oxygen bubbles produces an effervescent action, which may be useful for wound cleansing through removal of tissue debris. The activity of hydrogen peroxide may be reduced by the presence of blood and pus. The appropriate concentration of hydrogen peroxide for antiseptic use is 3%, although higher concentrations are available.

Precautions

Precautions vary with individual product and use. Consult individualized references.

Hypersensitivity reactions should be considered with organic compounds such as chlorhexidine, benzalkonium and hexachlorophene.

Skin dryness and irritation should be considered with all products, but particularly with those containing alcohol.

Systemic toxicity may result from ingestion of iodine containing compounds or mercury compounds.

Iodine compounds should be used sparingly during pregnancy and lactation due to risk of infant absorption of iodine with alterations in thyroid function.

Alcohols

Alcohols have been appreciated for centuries for their antiseptic qualities. As a chemical group, alcohols possess many features that are desirable for an antiseptic. They have a bactericidal action against vegetative cells. They are relatively inexpensive, usually easily obtainable, and relatively nontoxic with topical application.

Alcohols have a cleansing action, evaporate readily, and are colorless. Their destructive action against spores is much less effective than that against vegetative cells. The greatest amount of work has been done with ethanol.

Phenols

Crude mixtures of cresols (krē'sōl', -sōl', -sōl') solubilized by soap or alkali were originally introduced as **Lysol** and are still used as rough disinfectants. They need to be applied at high concentrations, are irritant, and toxic, but they kill bacteria, fungi, and some viruses.

Chlorinated cresols or xylenols are commonly used in practice. These compounds are less active against Staphylococci and Pseudomonas.

Hexachlorophene is a different kind of phenolic antiseptic that acts slowly, but binds strongly to the skin. It was used widely in surgical soaps and antiperspirant preparations. However, absorption through the skin can cause damage to the central nervous system, particularly in infants, and the use of hexachlorophene is now severely restricted.

Phenol no longer plays a significant role as an antibacterial agent, although its use has not been abandoned entirely. Phenols are still used today in drug formulations such as cold-sore creams and liquids, throat lozenges, and washes. Phenol derivatives are also used as preservatives and antimicrobial agents in germicidal soaps and lotions.

Quaternary Ammonium Compounds

Initially, Quaternary Ammonium Compounds were used as an adjunct to surgery, such as in preoperative patient skin treatment, de-germing the hands of the surgical team pre-operatively, and disinfection of surgical instruments.

(c) How to sanitize hands and disinfect tools

Learning objectives:

After completing this lesson you will be able to:

- Describe disease prevention
- Describe the recommended hand washing technique
- List ways to transmit pathogens
- List adverse effects of using hand sanitizers

Hand Washing

Hand washing, when done correctly, is the single most effective way to prevent the spread of communicable diseases. Good hand washing technique is easy to learn and can significantly reduce the spread of infectious diseases among both children and adults.

What types of disease can good hand washing prevent?

- Diseases spread through fecal-oral transmission. Infections which may be transmitted through this route include salmonellosis, shigellosis, hepatitis A, giardiasis, enterovirus, amebiasis, and campylobacteriosis. Because these diseases are spread through the ingestion of even the tiniest particles of fecal material, hand washing after using the toilet cannot be over-emphasized.
- Diseases spread through indirect contact with respiratory secretions. Microorganisms which may be transmitted through this route include influenza, Streptococcus, respiratory syncytial virus (RSV) and the common cold. Because these diseases may be spread indirectly by hands contaminated by respiratory discharges of infected people, illness may be avoided by washing hands after coughing or sneezing and after shaking hands with an individual who has been coughing and sneezing.
- Diseases may also be spread when hands are contaminated with urine, saliva or other moist body substances. Microorganisms which may be transmitted by one or more of these body substances include cytomegalovirus, typhoid, staphylococcal organisms, and Epstein-barr virus. These germs may be transmitted from person to person or indirectly by contamination of food or inanimate objects such as toys.

What is good hand washing technique?

There is more to hand washing than you think! By rubbing your hands vigorously with soapy water, you pull the dirt and the oily soils free from your skin. The soap lather suspends both the dirt and germs trapped inside and are then quickly washed away.

Follow these four simple steps to keeping hands clean:

- Wet your hands with warm running water.
- Add soap, then rub your hands together, making a soapy lather. Do this away from the running water for at least 15 seconds, being careful not to wash the lather away. Wash the front and back of your hands, as well as between your fingers and under your nails.
- Rinse your hands well under warm running water. Let the water run back into the sink, not down to your elbows.
- Dry hands thoroughly with a clean towel. Then turn off the water with a clean paper towel and dispose in a proper receptacle.

What type of soap should be used?

Any type of soap may be used. However, bar soap should be kept in a self draining holder that is cleaned thoroughly before new bars are put out and liquid soap containers (which must be used in day care centers) should be used until empty and cleaned before refilling. To prevent chapping use a mild soap with warm water; pat rather than rub hands dry; and apply lotion liberally and frequently.

May I use the over-the-counter alcohol gels for washing my hands instead of using soap and water?

These products, which can be found wherever soap is sold, are very effective at killing germs on the hands as long as your hands are not visibly dirty. They should be used when soap and water are not readily available.

To use correctly, apply about a teaspoonful of the alcohol gel on the palm of one hand. Then rub all over both hands, making sure you rub the front, back, and fingernail areas of both hands. Let the alcohol dry, which should take about 30 seconds.

If your hands look dirty but you have no other way to wash your hands, use the gel but wash with soap and water as soon as you can.

History of Hand Washing

The history of hand washing began in the Health Care Sector and has had a profound effect on the Personal Service and Beauty Industry.

For generations, hand washing with soap and water has been considered a measure of personal hygiene. The concept of cleansing hands with an antiseptic agent probably emerged in the early 19th century. As early as 1822, a French pharmacist demonstrated that solutions containing chlorides of lime or soda could eradicate the foul odors associated with human corpses and that such solutions could be used as disinfectants and antiseptics.

In 1846, Ignaz Semmelweis observed that women whose babies were delivered by students and physicians in the First Clinic at the General Hospital of Vienna consistently had a higher mortality rate than those whose babies were delivered by midwives in the Second Clinic.

He noted that physicians who went directly from the autopsy suite to the obstetrics ward had a disagreeable odor on their hands despite washing their hands with soap and water upon entering the obstetrics clinic. He proposed that the puerperal fever that affected so many of these women was caused by "cadaverous particles" transmitted from the autopsy suite to the obstetrics ward via the hands of students and physicians.

Perhaps because of the known deodorizing effect of chlorine compounds, as of May 1847, he insisted that students and physicians clean their hands with a chlorine solution between each patient in the clinic.

The maternal mortality rate in the First Clinic subsequently dropped dramatically and remained low for years. This intervention by Semmelweis represents the first evidence indicating that cleansing heavily contaminated hands with an antiseptic agent between patient contacts may reduce health-care--associated transmission of contagious diseases more effectively than hand washing with plain soap and water.

In 1961, the U. S. Public Health Service produced a training film that demonstrated hand washing techniques recommended for use by health-care workers. At the time, recommendations directed that personnel wash their hands with soap and water for 1--2 minutes before and after patient contact.

Rinsing hands with an antiseptic agent was believed to be less effective than hand washing and was recommended only in emergencies or in areas where sinks were unavailable.

Center for Disease Control

In 1975 and 1985, formal written guidelines on hand washing practices were published by the Center for Disease Control. These guidelines recommended hand washing with non-antimicrobial soap between services to patrons. Use of waterless antiseptic agents (alcohol-based solutions) was recommended only in situations where sinks were not available.

In 1988 and 1995, guidelines for hand washing and hand antisepsis were published by the Association for Professionals in Infection Control. Recommended indications for hand washing were similar to those listed in the CDC guidelines.

The 1995 APIC guideline included more detailed discussion of alcohol-based hand rubs and supported their use in more public settings than had been recommended in earlier guidelines.

In 1995 and 1996, the Healthcare Infection Control Practices Advisory Committee recommended that either antimicrobial soap or a waterless antiseptic agent be used. These guidelines also provided recommendations for hand washing and hand antisepsis in other public settings.

Transmission of Pathogens on Hands

Transmission of pathogens from one person to another happens when:

- Organisms present on the patron's skin transfers to the hands of the Salon Professional
- Hand washing or hand antisepsis by the Salon Professional are inadequate or omitted entirely, or the agent used for hand hygiene is inappropriate.
- The contaminated hands of the Salon Professional comes in direct contact with another person, or with an inanimate object that will come into direct contact with a person

Pathogens can be transported from one person to another. The number of organisms present on the skin varies.

Persons with diabetes, patients undergoing dialysis for chronic renal failure, and those with chronic dermatitis are more likely to have colonized organisms. We shed microorganisms daily from normal skin onto nightgowns, bed linen, bedside furniture, and other objects in our environment.

Scientific Study of Hand Washing

Investigators use different methods to study hand washing, antiseptic hand wash, and surgical hand antisepsis protocols.

Differences among the various studies include:

- whether hands are purposely contaminated with bacteria before use of test agents,
- the method used to contaminate fingers or hands,
- the volume of hand-hygiene product applied to the hands,

- the time the product is in contact with the skin,
- the method used to recover bacteria from the skin after the test solution has been used, and
- the method of expressing the effectiveness of the product

Despite these differences, the majority of studies can be placed into one of two major categories:

1. studies focusing on products to remove transient flora and
2. studies involving products that are used to remove resident flora from the hands

The majority of studies of products for removing transient flora from the hands involve artificial contamination of the volunteer's skin with a defined test organism before the volunteer uses a plain soap, an antimicrobial soap, or a waterless antiseptic agent.

In the United States, antiseptic hand wash products are regulated by FDA's Division of Over-the-Counter Drug Products (OTC). Products are evaluated by using a standardized method. Tests are performed in accordance with use directions for the test material.

Plain (Non-Antimicrobial) Soap

Soaps are detergent-based products that contain esterified fatty acids and sodium or potassium hydroxide. They are available in various forms including bar soap, tissue, leaflet, and liquid preparations. Their cleaning activity can be attributed to their detergent properties, which result in removal of dirt, soil, and various organic substances from the hands.

Plain soaps have minimal, if any, antimicrobial activity. However, hand washing with plain soap can remove loosely adherent transient flora. For example, hand washing with plain soap and water for 15 seconds reduces bacterial counts on the skin by 0.6--1.1, whereas washing for 30 seconds reduces counts by 1.8--2.8.

Alcohol-based Hand Cleansers

The majority of alcohol-based hand antiseptics contain either isopropanol, ethanol, n-propanol, or a combination of two of these products.

The majority of studies of alcohols have evaluated individual alcohols in varying concentrations. Other studies have focused on combinations of two alcohols or alcohol solutions containing limited amounts of hexachlorophene, quaternary ammonium compounds, povidone-iodine, triclosan, or chlorhexidine gluconate.

Alcohols, when used in concentrations present in alcohol-based hand rubs, also have activity against several viruses.

For example, 70% isopropanol and 70% ethanol are more effective than medicated soap or nonmedicated soap in reducing viruses on fingers. Products containing 60% ethanol were also found to reduce the presence of viruses.

Other viruses such as hepatitis A and the polio virus may require 70%--80% alcohol to be reliably inactivated. However, both 70% ethanol and a 62% ethanol foam product with emollients reduced hepatitis A virus on whole hands or fingertips more than nonmedicated soap.

Both were equally as effective as antimicrobial soap containing 4% chlorhexidine gluconate in reducing reduced viral counts on hands. In the same study, both 70% ethanol and the 62% ethanol foam product demonstrated greater virucidal activity against polio virus than either non-antimicrobial soap or a 4% chlorhexidine gluconate-containing soap.

However, depending on the alcohol concentration, the amount of time that hands are exposed to the alcohol, and viral variant, alcohol may not be effective against hepatitis A and other viruses. Alcohol can prevent the transfer some pathogens.

Alcohol-based products are more effective for standard hand washing than soap or antimicrobial soaps.

The effectiveness of alcohol-based hand-hygiene products is affected by several factors, including:

- the type of alcohol used
- concentration of alcohol
- contact time
- volume of alcohol used and
- whether the hands are wet when the alcohol is applied

Frequent use of alcohol-based formulations for hand antisepsis can cause drying of the skin unless emollients, humectants, or other skin-conditioning agents are added to the formulations. The drying effect of alcohol can be reduced or eliminated by adding 1%--3% glycerol or other skin-conditioning agents.

Moreover, in several recent prospective trials, alcohol-based rinses or gels containing emollients caused substantially less skin irritation and dryness than the soaps or antimicrobial detergents tested. These studies, which were conducted in clinical settings, used various subjective and objective methods for assessing skin irritation and dryness. Further studies are warranted to establish whether products with different formulations yield similar results.

Alcohols are flammable. As a result, alcohol-based hand rubs should be stored away from high temperatures or flames in accordance with National Fire Protection Agency recommendations.

Chlorhexidine

Chlorhexidine was developed in England in the early 1950s and was introduced into the United States in the 1970s. It has antimicrobial activity. Chlorhexidine's immediate antimicrobial activity occurs more slowly than that of alcohols. Chlorhexidine has good activity against some bacteria, somewhat less activity against other bacteria and fungi. It has activity against some viruses such as herpes simplex virus, HIV, and influenza.

Chloroxylenol

Chloroxylenol is a phenolic compound that has been used as a preservative in cosmetics and other products and as an active agent in antimicrobial soaps. It was developed in Europe in the late 1920s and has been used in the United States since the 1950s. The antimicrobial activity of PCMX is attributable to inactivation of bacterial enzymes and alteration of cell walls. It has good activity against certain organisms and fair activity against some bacteria, and certain viruses.

Hexachlorophene

In the 1950s and early 1960s, emulsions containing 3% hexachlorophene were widely used for hygienic hand washing, as surgical scrubs, and for routine bathing of infants in hospital nurseries. The antimicrobial activity of hexachlorophene results from its ability to inactivate essential enzyme systems in microorganisms. Studies of hexachlorophene as a hygienic hand wash and surgical scrub demonstrated only modest efficacy after a single hand wash. Hexachlorophene has residual activity for several hours after use and gradually reduces bacterial counts on hands after multiple uses. It has a cumulative effect. With repeated use of 3% hexachlorophene preparations, the drug is absorbed through the skin.

Iodine and Iodophors

Iodine has been recognized as an effective antiseptic since the 1800s. However, because iodine often causes irritation and discoloring of skin, iodophors have largely replaced iodine as the active ingredient in antiseptics.

Iodine molecules rapidly penetrate the cell wall of microorganisms and inactivate cells by forming complexes with amino acids and unsaturated fatty acids, resulting in impaired protein synthesis and alteration of cell membranes

The majority of iodophor preparations used for hand hygiene contain 7.5%--10% povidone-iodine. Formulations with lower concentrations also have good antimicrobial activity because dilution can increase free iodine concentrations. However, as the amount of free iodine increases, the degree of skin irritation also may increase.

Quaternary Ammonium Compounds

Quaternary ammonium compounds are the most widely used as antiseptics.

Quaternary ammonium compounds are primarily bacteriostatic and fungistatic, although they are microbicidal against certain organisms at high concentrations.

In the United States, these compounds have been seldom used for hand antiseptics during the last 15--20 years. However, newer hand washing products containing benzalkonium chloride or benzethonium chloride have recently been introduced for use.

A recent study of surgical intensive-care unit personnel found that cleaning hands with antimicrobial wipes containing a quaternary ammonium compound was about as effective as using plain soap and water for hand washing; both were less effective than decontaminating hands with an alcohol-based hand rub.

One laboratory-based study reported that an alcohol-free hand-rub product containing a quaternary ammonium compound was effective in reducing microbial counts on the hands of volunteers.

Triclosan

Triclosan is a nonionic, colorless substance that was developed in the 1960s. It has been incorporated into soaps and into other consumer products. Concentrations of 0.2%--2% have antimicrobial activity. Triclosan has a broad range of antimicrobial activity. It is classified as safe and effective for use as an antiseptic hand wash.

Other Agents

Certain other agents are being evaluated by FDA for use in health-care-related antiseptics. However, the effectiveness of these agents has not been evaluated adequately for use in hand washing preparations.

Irritant Contact Dermatitis Resulting from Hand-Hygiene Measures

Frequency of Irritant Contact Dermatitis

Frequent and repeated use of hand-hygiene products, particularly soaps and other detergents, is a primary cause of chronic irritant contact dermatitis.

This is of great concern to Cosmetologists and all Salon Professionals in the Personal Service Industry.

The potential of detergents to cause skin irritation can vary considerably. Irritation associated with antimicrobial soaps may be caused by the antimicrobial agent or by other ingredients of the formulation. Affected persons often complain of a feeling of dryness or burning; skin that feels rough or even scaling.

Detergents can damage the skin. Irritant contact dermatitis is more commonly reported with iodophors. Other antiseptic agents that can cause irritant contact dermatitis (in order of decreasing frequency) include chlorhexidine, triclosan, and alcohol-based products.

Skin that is damaged by repeated exposure to detergents may be more susceptible to irritation by alcohol-based preparations.

Allergic Contact Dermatitis Associated with Hand-Hygiene Products

Allergic reactions to products applied to the skin may present as delayed type reactions or less commonly as immediate reactions. The most common causes of contact allergies are fragrances and preservatives; emulsifiers are less common causes. Liquid soaps, hand lotions or creams, and may contain ingredients that cause contact allergies.

Allergic reactions to antiseptic agents, including quaternary ammonium compounds, iodine or iodophors, chlorhexidine, triclosan, and alcohols have been reported. Allergic contact dermatitis associated with alcohol-based hand rubs is uncommon.

Allergic reactions to alcohol-based products may represent true allergy to alcohol, allergy to an impurity or aldehyde metabolite, or allergy to another constituent of the product. Allergic contact dermatitis or immediate contact reactions may be caused by ethanol or isopropanol. Allergic reactions can be caused by compounds that may be present as inactive ingredients in alcohol-based hand rubs, including fragrances, benzyl alcohol, stearyl or isostearyl alcohol, phenoxyethanol, myristyl alcohol, propylene glycol, parabens, and benzalkonium chloride.

Proposed Methods for Reducing Adverse Effects of Agents

Potential strategies for minimizing hand-hygiene--related irritant contact dermatitis include reducing the frequency of exposure to irritating agents (particularly detergents), replacing products with high irritation potential with preparations that cause less damage to the skin, and increasing education on hand care.

Hand lotions and creams often contain humectants and various fats and oils that can increase skin hydration and replace altered or depleted skin lipids that contribute to the barrier function of normal skin.